

Abstract submitted for the Postlabelling Meeting in Lyon, June 199

DETERMINATION OF SMOKING-RELATED DNA ADDUCTS IN LUNG-CANCER AND
NON-CANCER PATIENTS

Bernadette Schoket, Szilárd Kostic* and István Vincze
Department of Biochemistry, Johan Béla National Institute of Public
Health and *Thoracic Surgical Clinic, Korányi National Institute of
Pulmonology, Budapest, Hungary.

Molecular events of tobacco-associated carcinogenesis involve the formation of DNA adducts of carcinogen metabolites which is considered a necessary early step in this adverse process. DNA has been isolated from uninvolved bronchial tissues of 98 patients undergoing pulmonary surgery and aromatic DNA adduct levels have been determined by ^{32}P -postlabelling using the Nuclease P1 adduct enrichment. Correlations have been investigated between levels of DNA adducts, smoking status, histological diagnosis and other factors. Statistical evaluations have been made by Mann-Whitney U-test. Mean DNA adduct level of the 45 current smokers was 9.87 ± 4.06 adducts in 10^8 nucleotides which was significantly higher ($p=0.022$) than that of the 16 life-time non-smokers having 7.59 ± 3.63 adducts in 10^8 nucleotides. DNA adduct levels of those 25 former smokers, who stopped smoking within a year before surgery, did not differ significantly from the current smokers' adduct level. Those 12 former smokers, however, who had given up smoking more than a year before surgery showed decreased levels of DNA adducts which was the same as life-time non-smokers'. Non-cancer patients, individuals with squamous-cell carcinoma and with other lung cancers exhibited very similar adduct levels, and no significant difference of adduct levels was found if cancer and non-cancer patients were compared either among the current smokers or life-time non-smokers. The results have given information on the persistence and slow repair of smoking-related aromatic DNA adducts in human bronchial tissue. Simple quantitative association has not been found between bronchial DNA adduct level and lung cancer.

2023251896